

REMARKS

The Office Action mailed on March 19, 2007 has been carefully considered by Applicant.

In the Office Action, claims 1-5 have been rejected under 35 U.S.C. §102(e) as being anticipated by Kim et al. U.S. Patent Publication No. 2004/0128608. Claim 6 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al. in view of Harima U.S. Patent No. 5,805,018. Claims 7-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al.

By the present amendment, the claims in the present application have been amended to more particularly point out and distinctly claim the subject matter of the present invention, and to render the same allowable over the applied references.

Claim 1

Claim 1, as amended, recites a communication system that reduces the burden on the modulation and transmission circuitry while improving the performance of the signal communication. The communication system comprises a first device with a single modulator that modulates a first digital signal and transmits a modulated signal. Claim 1 further requires a second device that receives the modulated signal. The second device includes a first demodulator that implements a first demodulation technique on the modulated signal and a second demodulator that implements a second demodulation technique on the modulated signal in parallel with the first demodulator. The first demodulation technique is directed towards the demodulation of a non-minimum shift modulation indexed signal. The second demodulation technique is directed towards the demodulation of a minimum shift modulation indexed signal and a second demodulator that implements a second demodulation technique. The first demodulator and the second demodulator output a first and a second demodulator signal output respectively.

Kim et al. U.S. Patent Publication 2004/0128608 (hereinafter "Kim et al") fails to anticipate amended claim 1 as Kim et al. fails to teach only a single modulator on the first device and a second device that utilizes both a minimum shift modulation indexed

demodulator and a non-minimum shift modulation indexed demodulator in parallel. These elements provide the stated advantage of reducing the burden on the circuitry in the modulator while improving the performance of the communication system with only a slight increase in occupied bandwidth [see ¶ 0055]. The system taught in Kim et al. requires a more complex modulator 130 implementation that requires both a first modulator 131 and a second modulator 133.

The operation of the system as taught in Kim further differs from that claimed in presently amended claim 1, as Kim et al. teaches at paragraph [0049] that the wobble signal is synthesized from the BPSK and the FSK signals in accordance with the predetermined algorithm. Examples of these synthesized signals are depicted in Figures 3a, 3b, and 6-10d. Each of the exemplary signals show a multiplexed combination of the BPSK and FSK signals such that at any point in time the wobble signal is comprised solely of either a BPSK signal or an FSK signal. Kim et al. further teaches a second device that utilizes BPSK and FSK demodulators that match the pair of modulators in the first device to demodulate only the respective portions of the multiplexed wobble signal.

Therefore Kim et al. fails to anticipate presently amended claim 1 as the first device comprises a single modulator that transmits a modulated signal and a second device that comprises a first demodulator in parallel with a second demodulator that both receive the modulated signal and demodulate the signal to produce first and second demodulated outputs. The first and second demodulated outputs individually comprise a demodulation of the entire received signal.

Presently amended claim 1 incorporates the subject matter as claimed in claim 6, which is presently cancelled. The Examiner previously rejected claim 6 under 35 U.S.C §103(a) as being unpatentable over Kim et al. in view of Harima U.S. Patent No. 5,805,018 (hereinafter "Harima"). Applicant respectfully disagrees that Harima discloses the use of non-minimum shift keying demodulator. The Examiner cites Harima column 1, lines 7-14 in support of the disclosure; however, this cited disclosure in Harima references QPSK, GMSK, and 16QAM demodulation techniques. The minimum

shift/non-minimum shift modulation index distinction is only applicable to FSK type demodulation techniques. Of the three techniques referenced by Harima GMSK is the only FSK technique. GMSK stands for "Gaussian Minimum Shift Keying" (a type of minimum shift keying) and therefore, none of the disclosed techniques teach non-minimum shift keying. Furthermore, Harima does not teach the use of multiple demodulators in parallel, but rather in a time division multiplexed fashion to enable higher demodulation processing in the system. Therefore, it would not be obvious to combine Harima with Kim et al. to teach the use of a minimum shift modulation indexed demodulator and a non-minimum shift modulation indexed demodulator in parallel for improving the quality of the demodulation of a modulated signal.

Claim 34

Claim 34 depends directly from independent claim 1 and includes the error detection module outputting a second digital signal chosen from between the first demodulated output and the second demodulated output. Claim 34 is believed to be allowable for the reasons stated above as well as the subject matter recited therein. The error detection module of claim 34 promotes communication efficiency by choosing the correct output signal from the first and the second demodulated outputs.

Claims 2-5, 35, and 36

Claims 2-5, 35, and 36 depend directly and/or indirectly from independent claim 1 which is believed allowable. As such, claims 2-5, 35, and 36 are believed allowable for the reasons stated above as well as the subject matter recited therein.

Claim 7

Presently amended claim 7 has been amended to include the limitations of previously dependent claims 8, 9, and 11. Presently amended claim 7 further includes selecting between the first demodulated signal and the second demodulated signal based on the error detection algorithm and the signal that best represents a corresponding portion of the first digital signal. Claim 7 is now believed allowable for the same distinguishing factors with respect to Kim et al. as pointed out in regards to presently

Application No. 10/694,039
Amendment Dated June 12, 2007
Reply to Office Action of March 19, 2007

amended claim 1. As such, claim 7 is believed allowable for the reasons stated above as well as the subject matter recited therein.

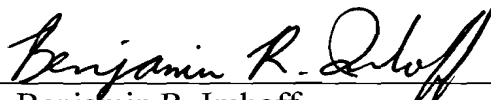
Claims 8-11, 37 and 38

Claims 8, 9 and 11 have been included in the subject matter as claimed in claim 7 and are presently cancelled. As such, the Examiner's rejection of these claims rendered moot. Claims 10, 37 and 38 dependent directly and/or indirectly from presently amended independent claim 7 and are thus believed allowable for the reasons stated above as well as the subject matter recited therein.

The present application is thus believed in condition for allowance with claims 1-7, 10, and 34-38. Such action is respectfully requested.

Respectfully submitted,

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